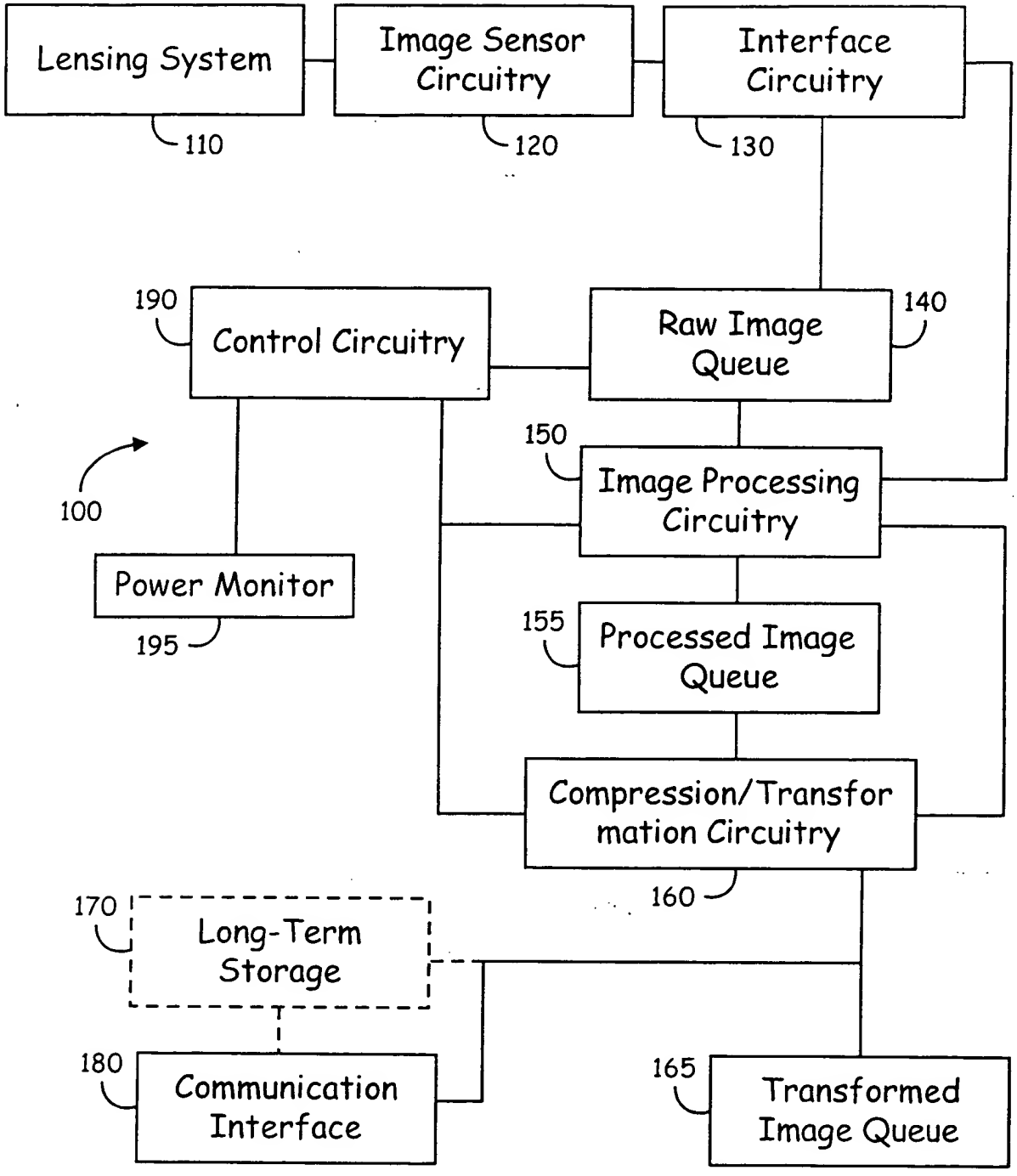
Lensing System
110
Image Sensor Circuitry
120
Interface Circuitry
130
190
Control Circuitry
Raw Image Queue
140
100
150
Image Processing Circuitry
Power Monitor
195
155
Processed Image Queue
Compression/Transformation Circuitry
160
170
Long-Term Storage
180
Communication Interface
165
Transformed Image Queue

Fig. 1

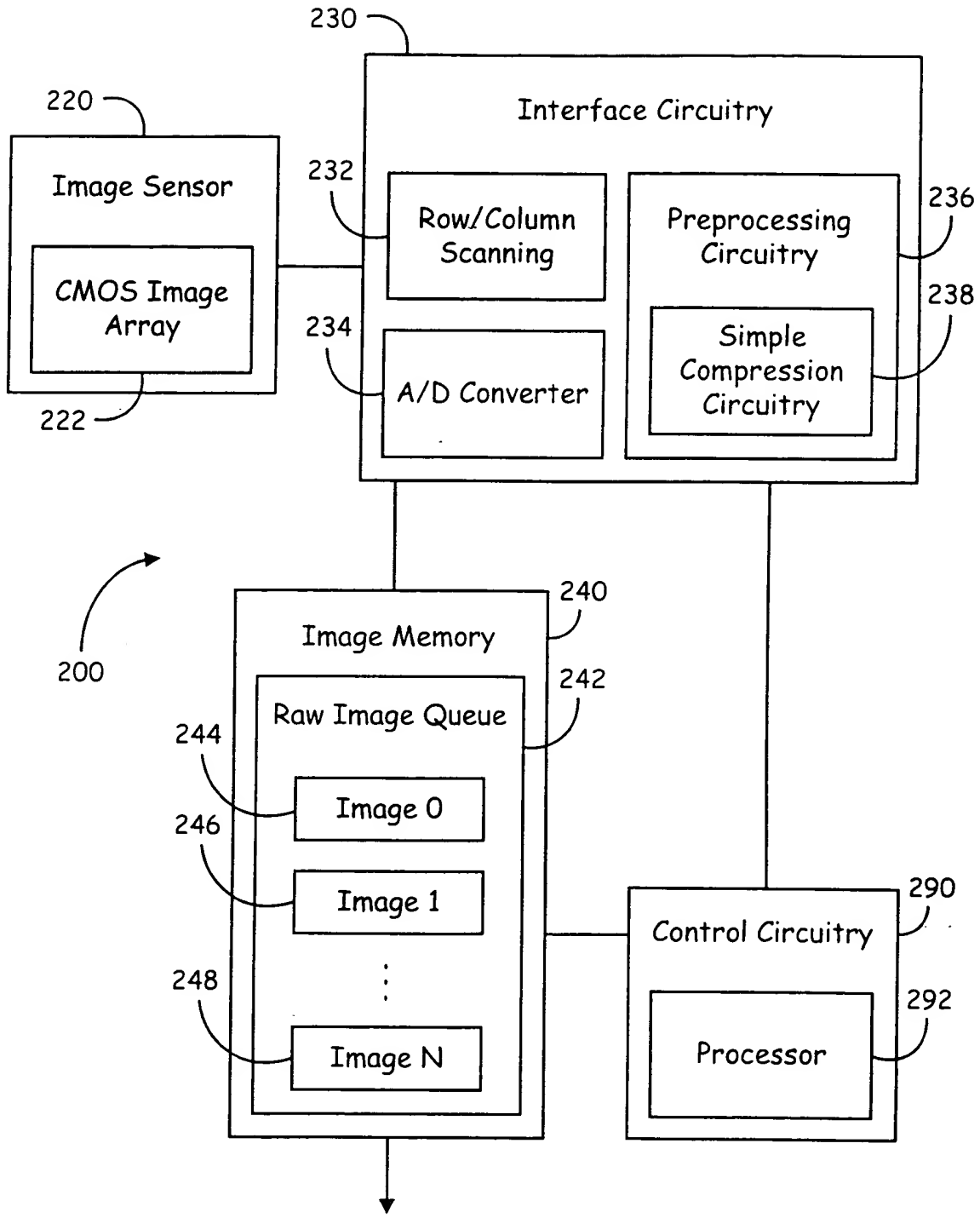
230
Interface Circuitry
220
Image Sensor
232
Row/Column Scanning
236
Preprocessing Circuitry
238
CMOS Image Array
234
A/D Converter
Simple Compression Circuitry
222
200
240
Image Memory
242
Raw Image Queue
244
Image 0
246
Image 1
290
Control Circuitry
248
Image N
292
Processor

Fig. 2

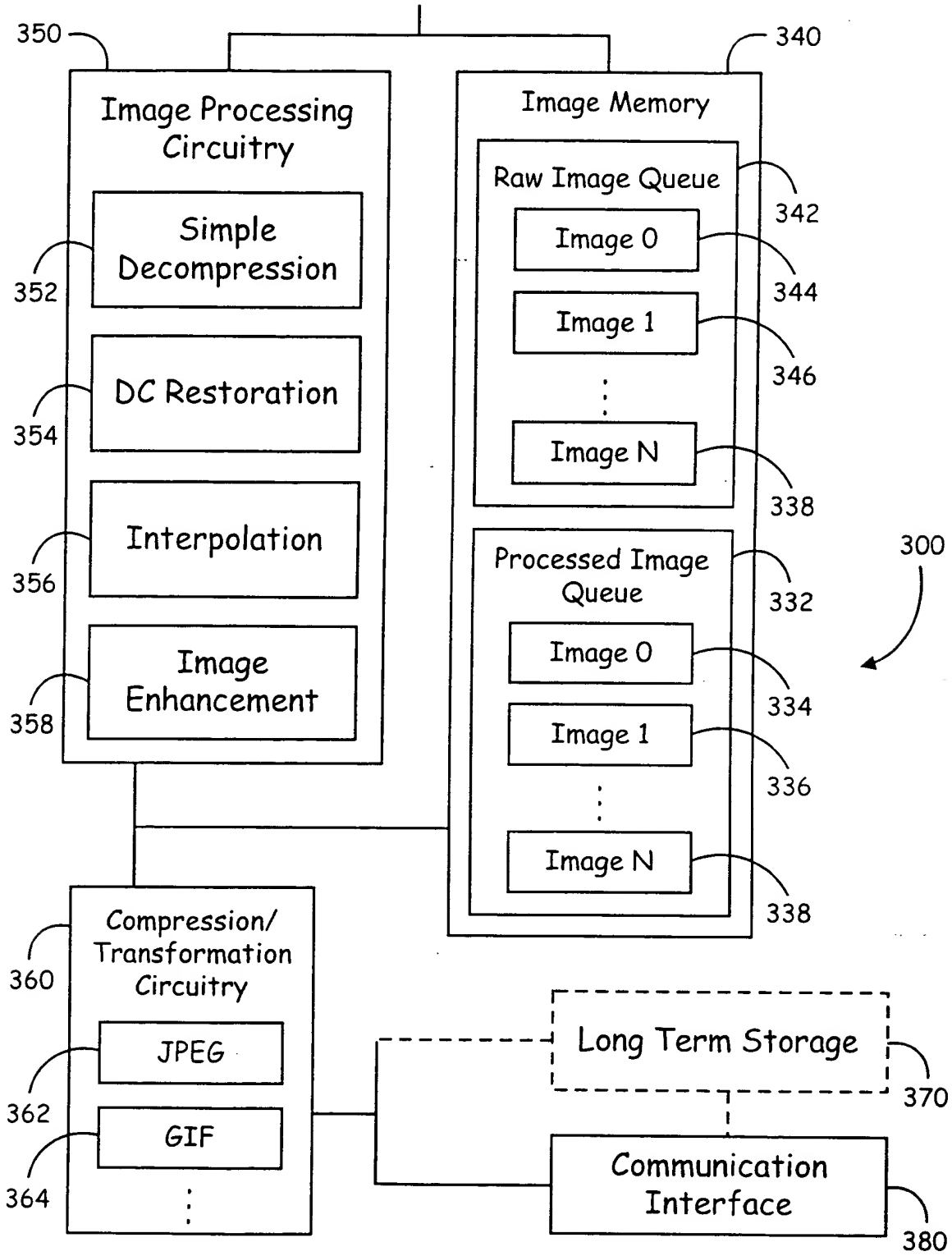
350
Image Processing Circuitry
Simple Decompression
352
DC Restoration
354
Interpolation
356
Image Enhancement
358
340
Image Memory
Raw Image Queue
342
Image 0
344
Image 1
346
Image N
338
Processed Image Queue
332
Image 0
334
Image 1
336
Image N
338
300
Compression/ Transformation Circuitry
360
JPEG
362
GIF
364
Long Term Storage
370
Communication Interface
380

Fig. 3

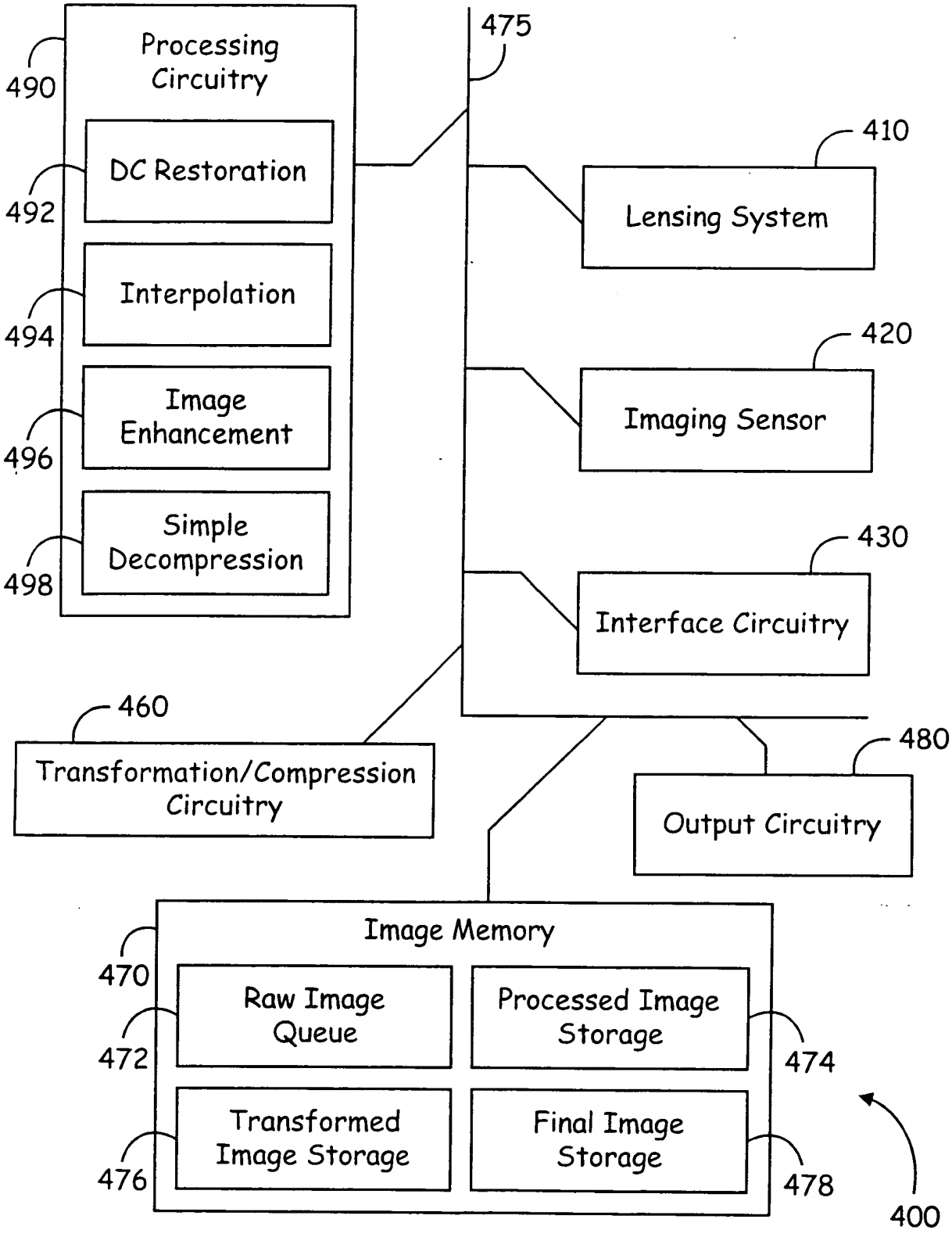
Processing Circuitry
490
DC Restoration
492
Interpolation
494
Image Enhancement
496
Simple Decompression
498
475
410
Lensing System
420
Imaging Sensor
430
Interface Circuitry
460
Transformation/Compression Circuitry
480
Output Circuitry
Image Memory
470
Raw Image Queue
472
Processed Image Storage
474
Transformed Image Storage
476
Final Image Storage
478
400

Fig. 4

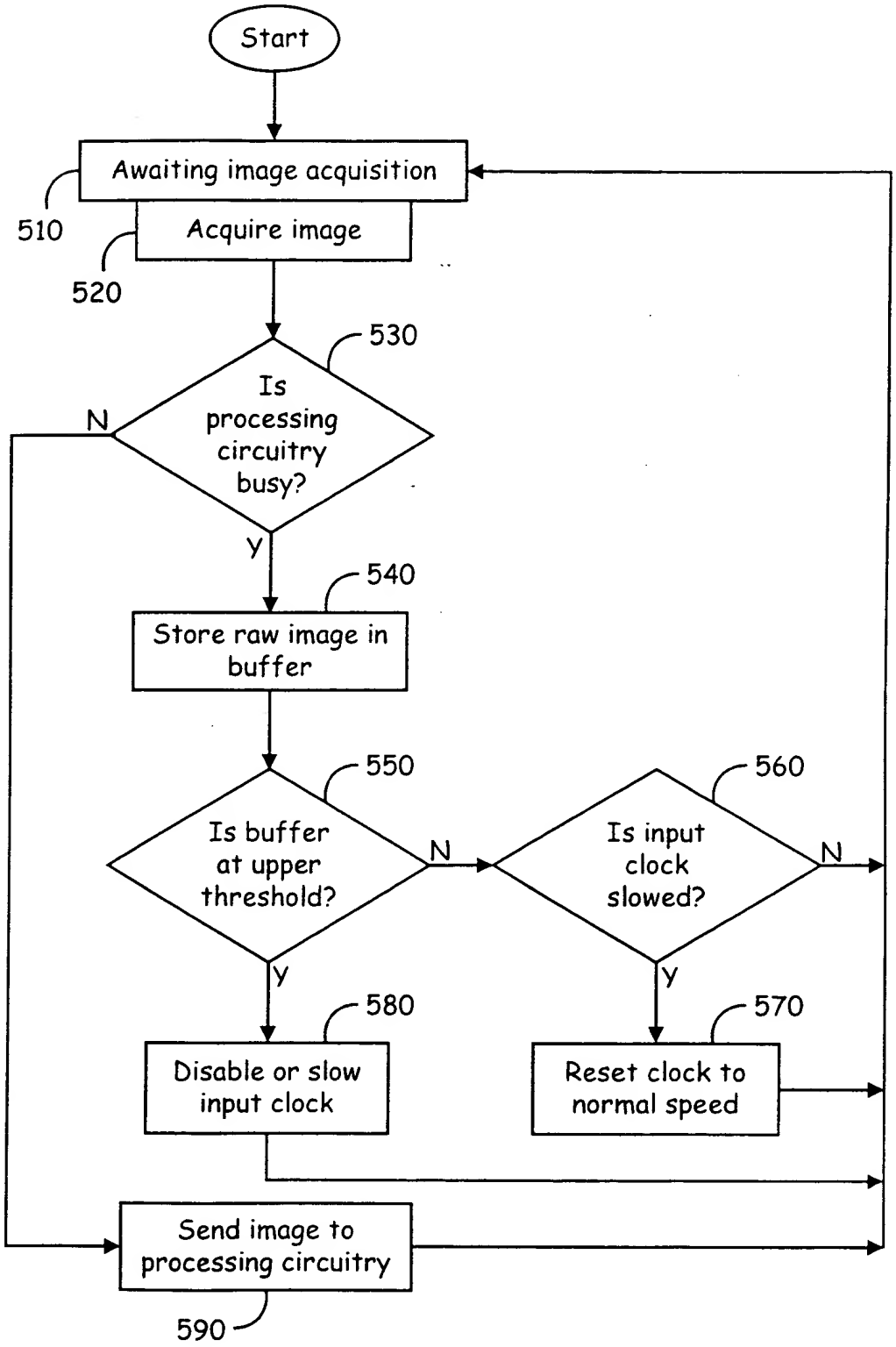
Start
Awaiting image acquisition
510
Acquire image
520
530
Is processing circuitry busy?
N
Y
540
Store raw image in buffer
550
Is buffer at upper threshold?
N
560
Is input clock slowed?
N
Y
Y
580
Disable or slow input clock
570
Reset clock to normal speed
Send image to processing circuitry
590

Fig. 5

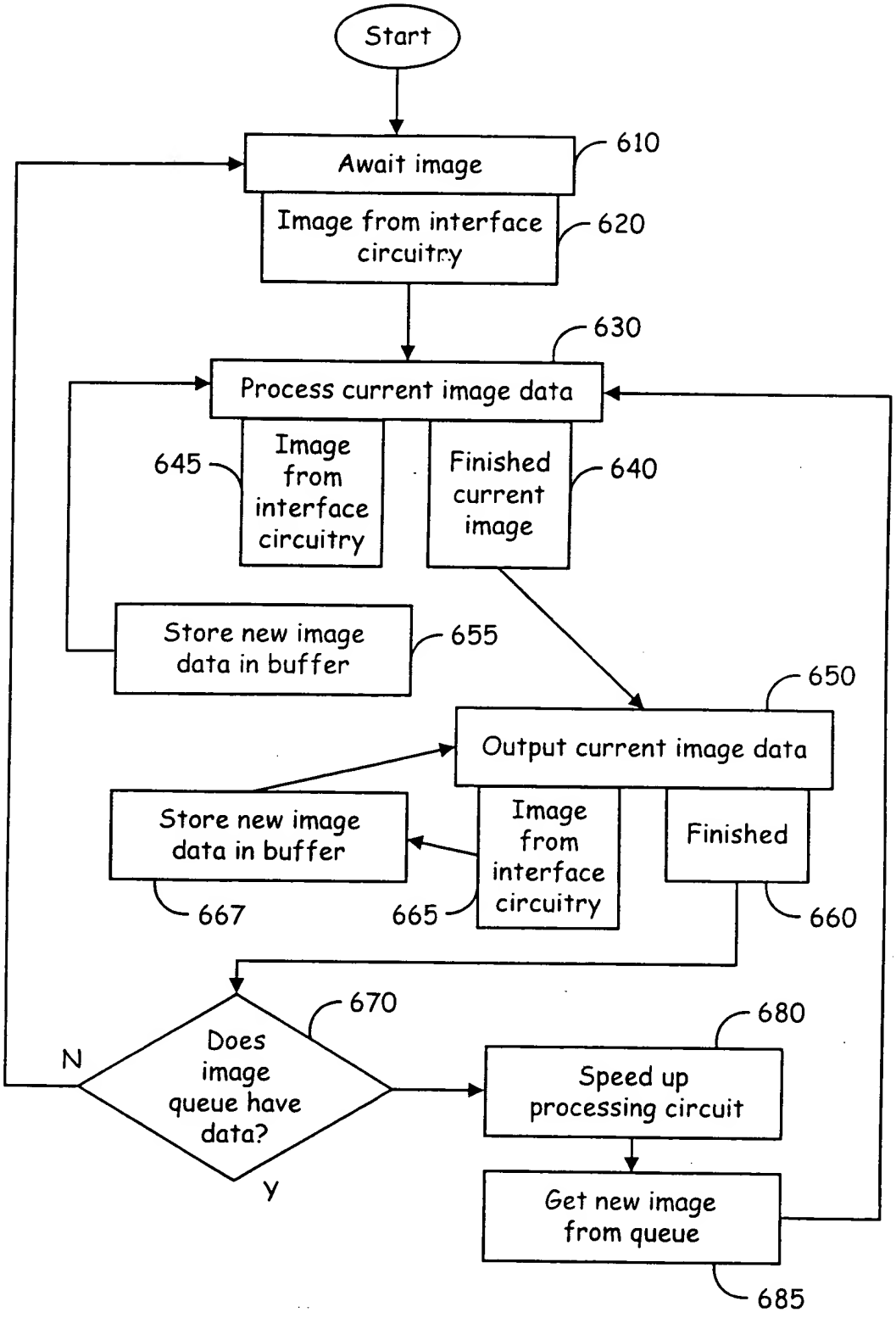
Start
Await image
610
Image from interface circuitry
620
630
Process current image data
645
Image from interface circuitry
Finished current image
640
Store new image data in buffer
655
650
Output current image data
Store new image data in buffer
667
Image from interface circuitry
665
Finished
660
670
Does image queue have data?
N
Y
680
Speed up processing circuit
Get new image from queue
685

Fig. 6

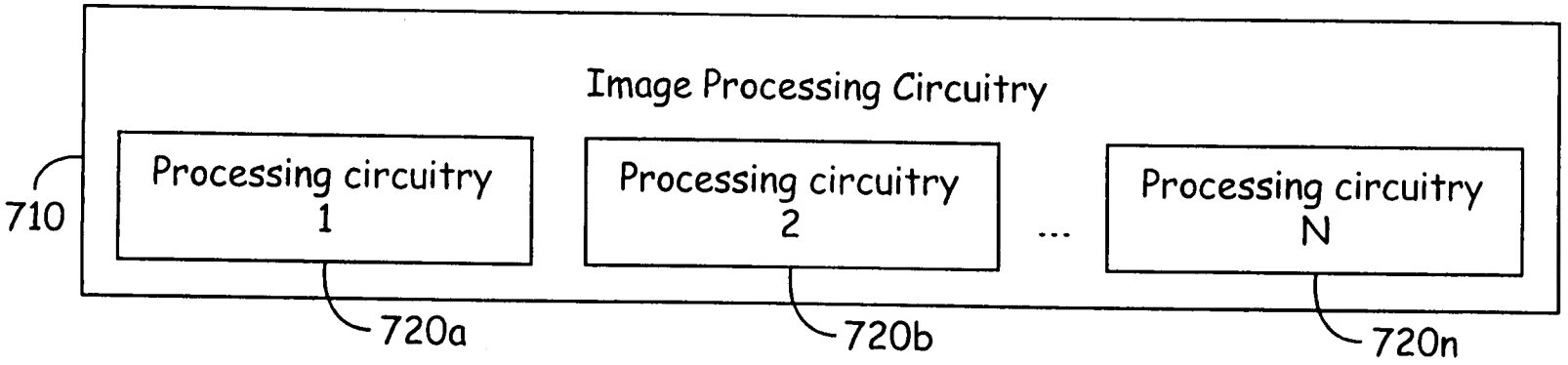

Fig. 7a

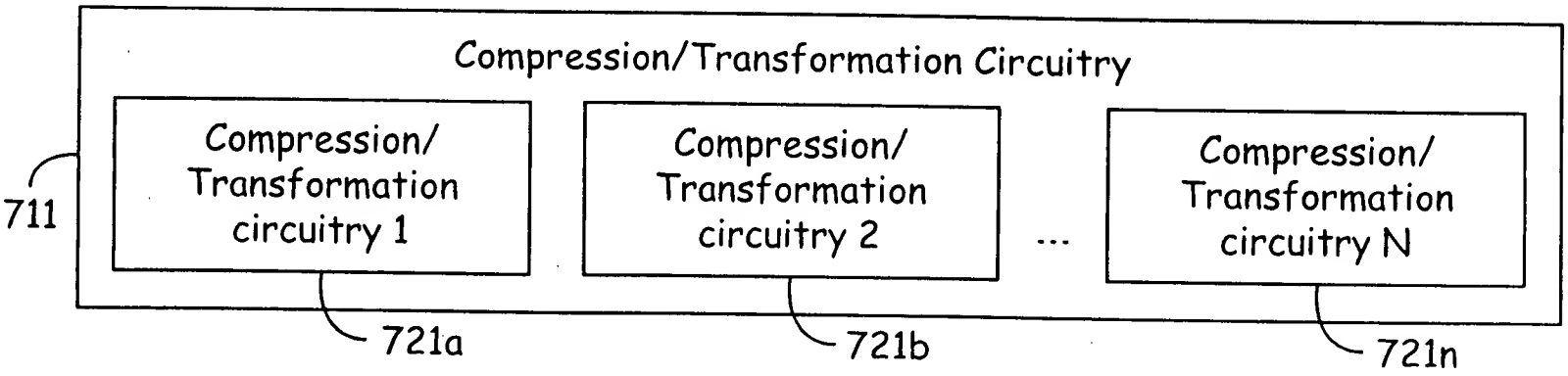

Fig. 7b

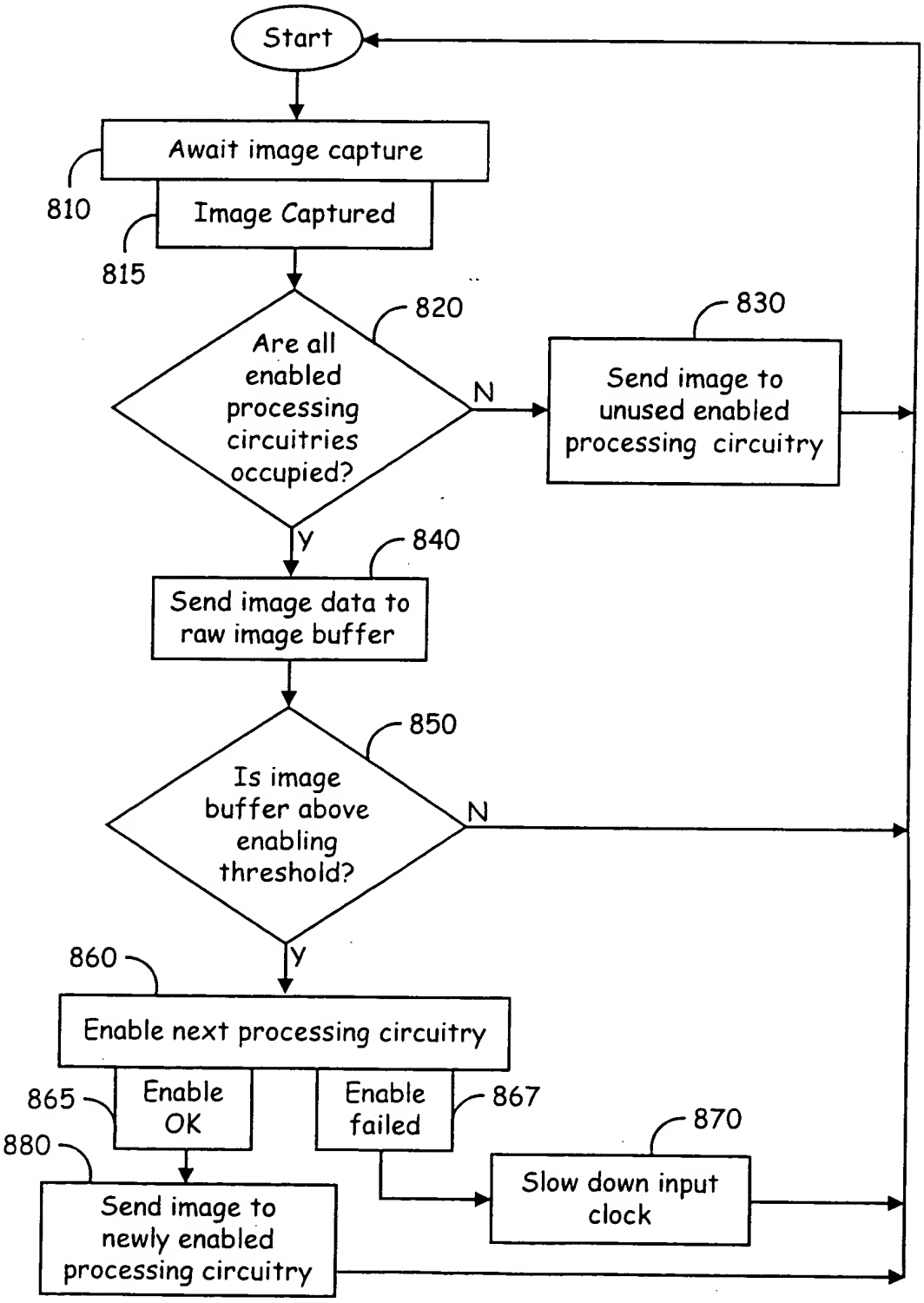
Start
Await image capture
810
Image Captured
815
820
Are all enabled processing circuitries occupied?
N
830
Send image to unused enabled processing circuitry
Y
840
Send image data to raw image buffer
850
Is image buffer above enabling threshold?
N
Y
860
Enable next processing circuitry
865
Enable OK
Enable failed
867
870
Slow down input clock
880
Send image to newly enabled processing circuitry

Fig. 8

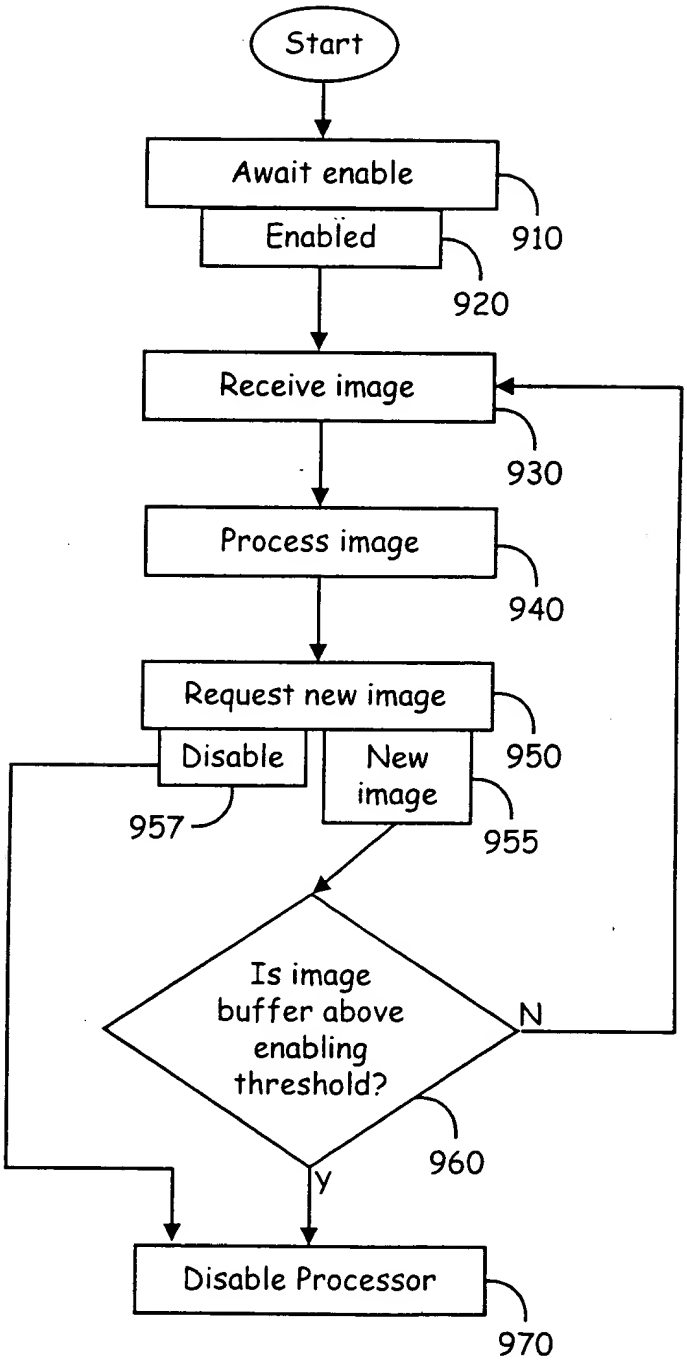
Start
Await enable
Enabled
910
920
Receive image
930
Process image
940
Request new image
Disable
New image
950
957
955
Is image buffer above enabling threshold?
N
960
Y
Disable Processor
970

Fig. 9

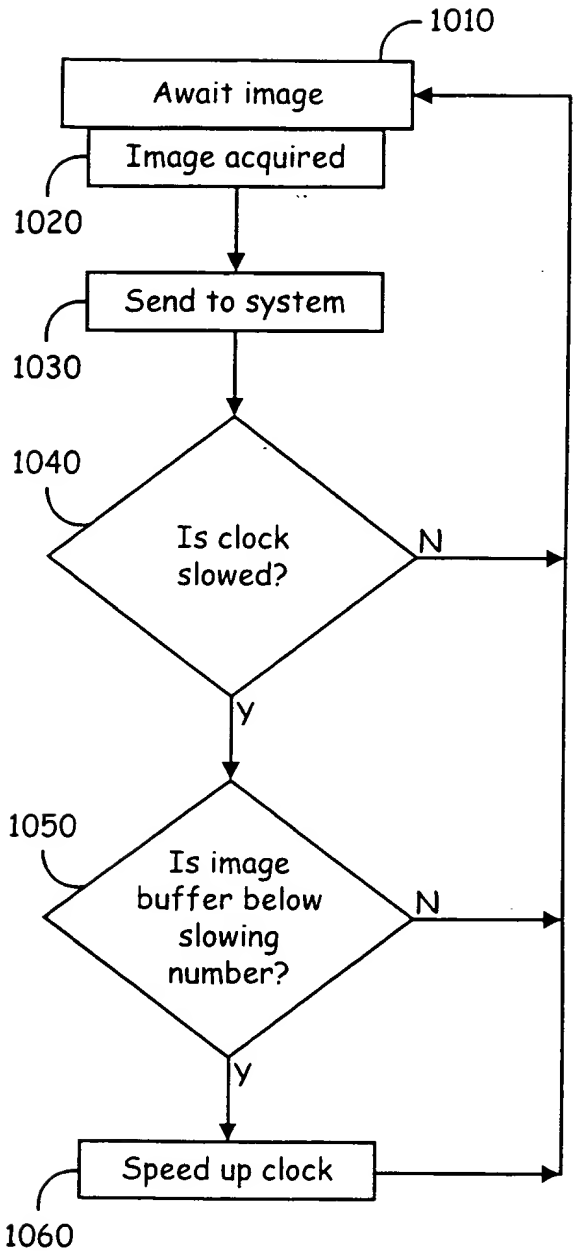
1010
Await image
Image acquired
1020
Send to system
1030
1040
Is clock slowed?
N
Y
1050
Is image buffer below slowing number?
N
Y
Speed up clock
1060

Fig. 10

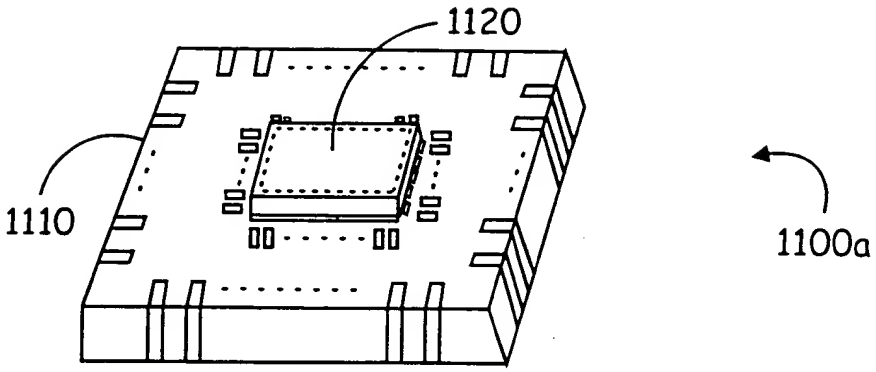

Fig. 11a

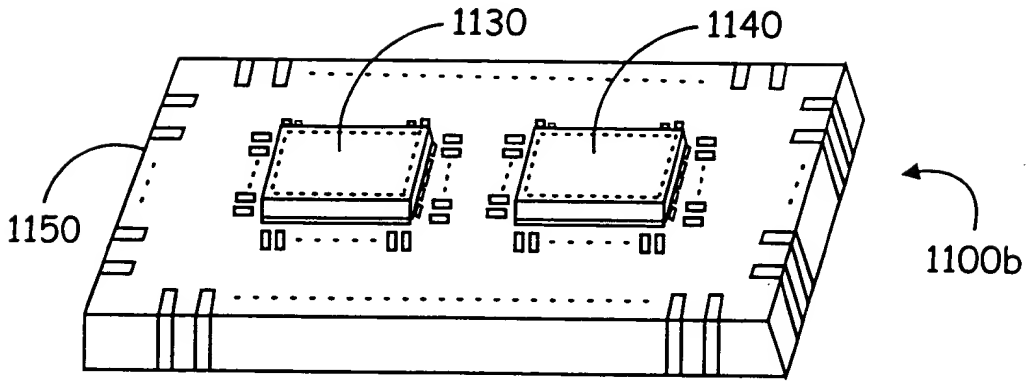

Fig. 11b